

A grayscale photograph of a person's profile on the left, holding an e-cigarette and exhaling a large, billowing cloud of white vapor that fills the right side of the frame. The background is a solid dark gray.

# **The Controversies around e-cigarettes: what we know so far**

Dr Jessica Gates  
Respiratory Research Fellow  
Portsmouth Hospitals NHS Trust

# Aims

What is an e-cigarette



```
graph TD; A[What is an e-cigarette] --> B[The Pros]; B --> C[The Cons]; C --> D[E-cigarettes and Asthma]; D --> E[Research for the future];
```

The Pros

The Cons

E-cigarettes and Asthma

Research for the future

## Nearly four MILLION US teens vape cannabis, CDC report reveals

- An estimated 2.6 million middle school or high school students uses an e-cigarette for marijuana
- Of high schoolers that use e-cigs, one third uses cannabis in the device
- A quarter of middle schoolers that vape have done so with cannabis
- The CDC's new report is the first of its kind, but its data suggests an increase in cannabis vaping over 2015 rates



## E-cigarettes 'should be on prescription'

6 February 2018

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The New York Times

## Addicted to Vaped Nicotine, Teenagers Have No Clear Path to Quitting



## NEWS

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### Health

## E-cigarettes 'much better for quitting smoking'

By Alex Therrien  
Health reporter, BBC News

30 January 2019

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## NEWS

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## Vaping shops selling to non-smokers

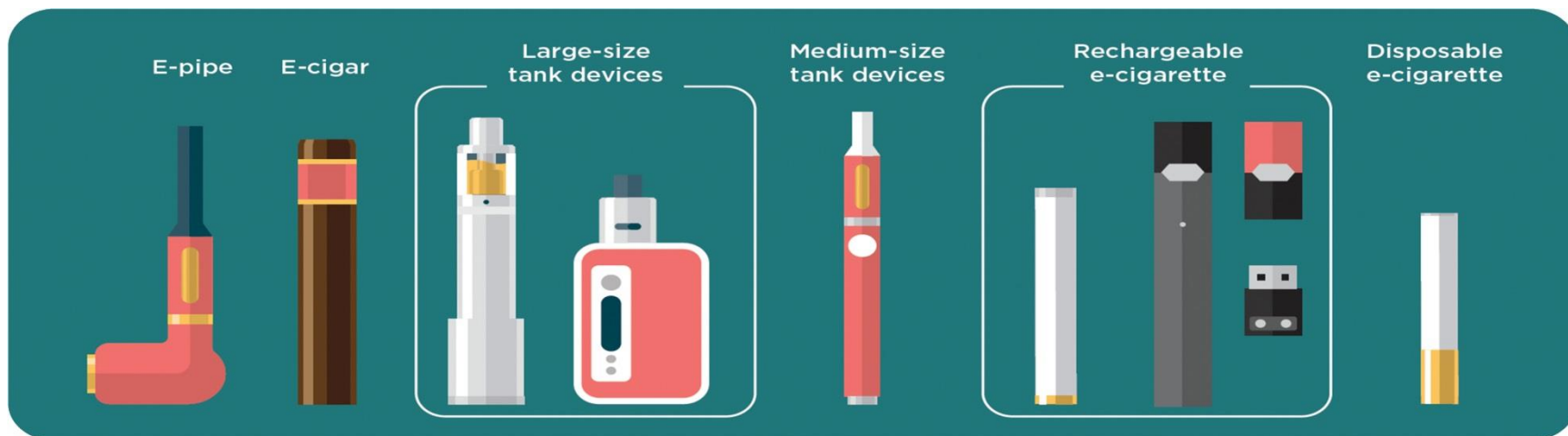
7 April 2017

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FDA News Release

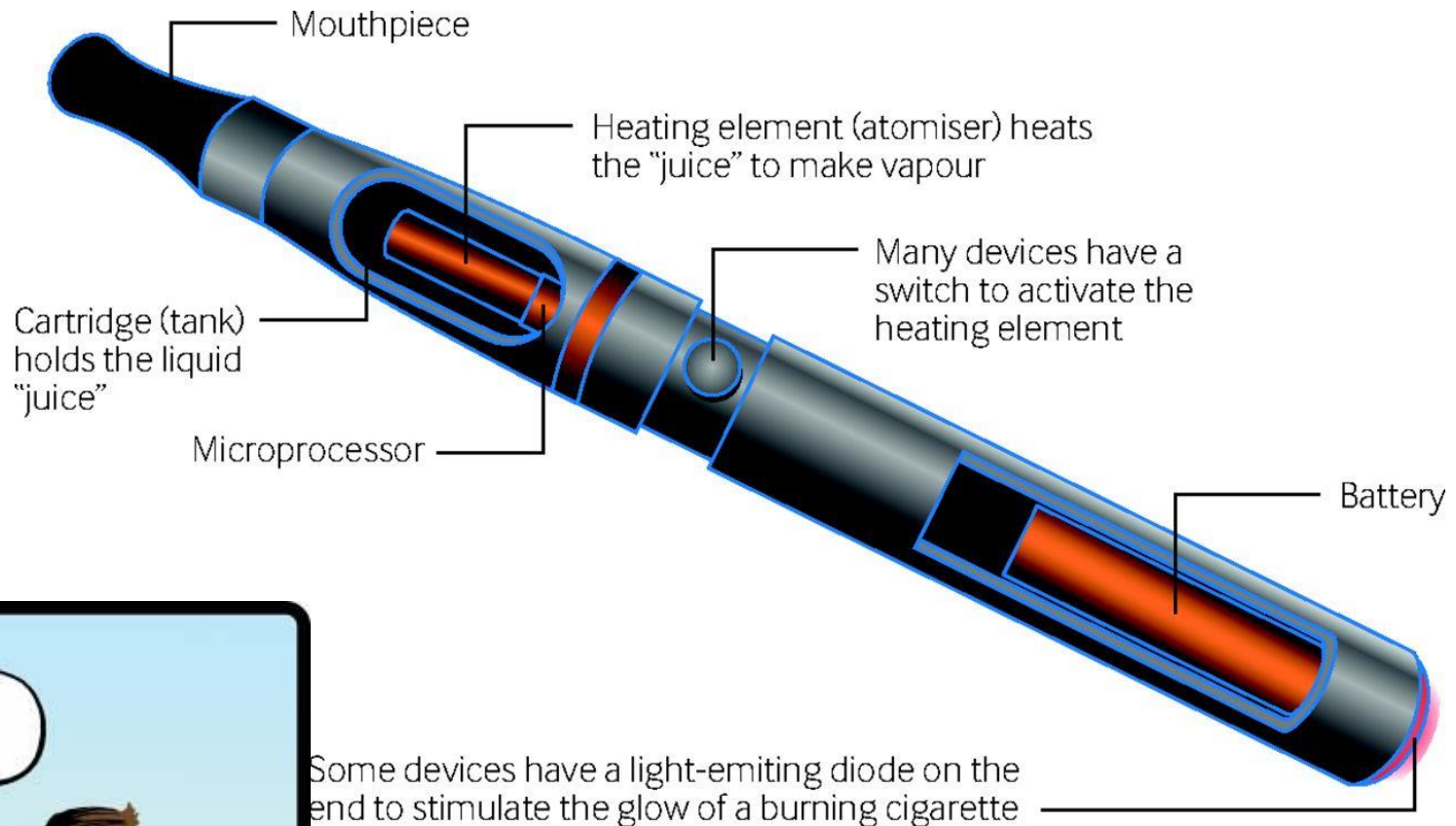
## Results from 2018 National Youth Tobacco Survey show dramatic increase in e-cigarette use among youth over past year

Sharp rise in e-cigarette use results in uptick in overall tobacco product use; prompts new, forceful steps by FDA to firmly confront and reverse youth epidemic



# What is an E-cigarette/ENDS/Vape?





# What does e-cigarette liquid contain?

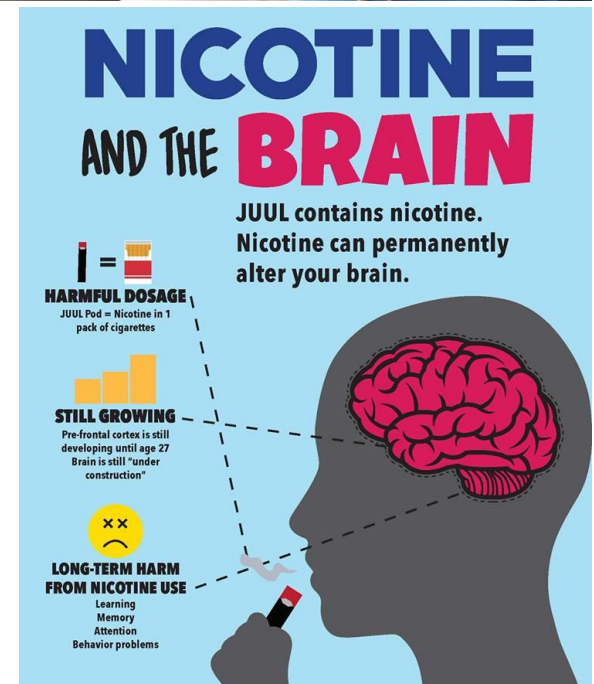
- Nicotine
- Vegetable Glycerine (VG)
- Propylene Glycol (PG)
- Flavourings





# Nicotine

- Fetal exposure to nicotine has been linked to multigenerational asthma, delayed growth, changes in the lungs and even sudden infant death syndrome
- Nicotine can harm the adolescent brain, in terms of addiction, reduced impulse control, deficits in attention and cognition and mood disorders, and these risks continue into the early to mid-20s.



# Flavourings



July 2018 Volume 27 Issue 4

Impact  
Factor  
5.469

## TOBACCO CONTROL

**THE TOBACCO COMPANIES**  
hope children can't  
tell the difference.



**m&m**  
CHOCOLATE CANDIES

**m&m**  
VAPE JUICE

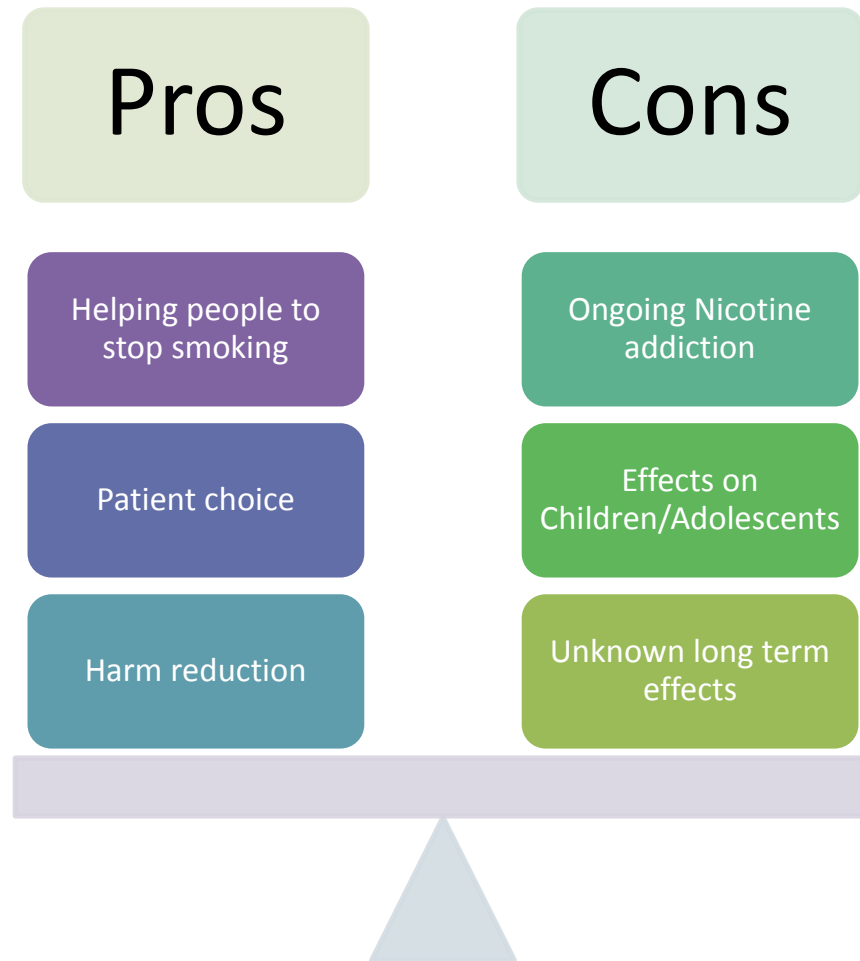
**Can you?**

tobaccocontrol.bmj.com **BMJ**





# The debate





**The Pros**

## NEWS

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## E-cigarettes 'much better for quitting smoking'

By Alex Therrien  
Health reporter, BBC News

🕒 30 January 2019



*The NEW ENGLAND JOURNAL of MEDICINE*

**ORIGINAL ARTICLE**

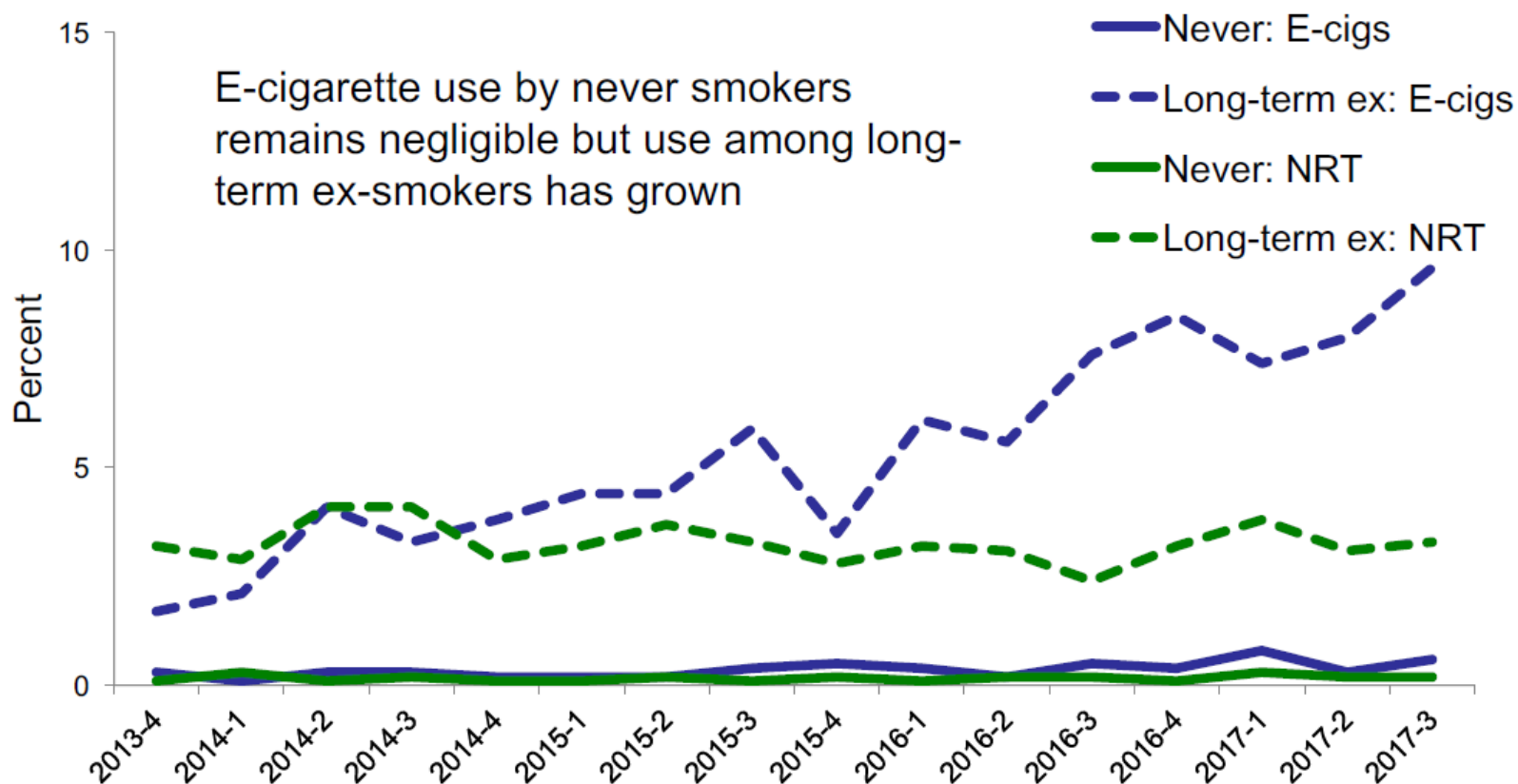
### A Randomized Trial of E-Cigarettes versus Nicotine-Replacement Therapy

Peter Hajek, Ph.D., Anna Phillips-Waller, B.Sc., Dunja Przulj, Ph.D.,  
Francesca Pesola, Ph.D., Katie Myers Smith, D.Psych., Natalie Bisal, M.Sc.,  
Jinshuo Li, M.Phil., Steve Parrott, M.Sc., Peter Sasieni, Ph.D.,  
Lynne Dawkins, Ph.D., Louise Ross, Maciej Goniewicz, Ph.D., Pharm.D.,  
Qi Wu, M.Sc., and Hayden J. McRobbie, Ph.D.

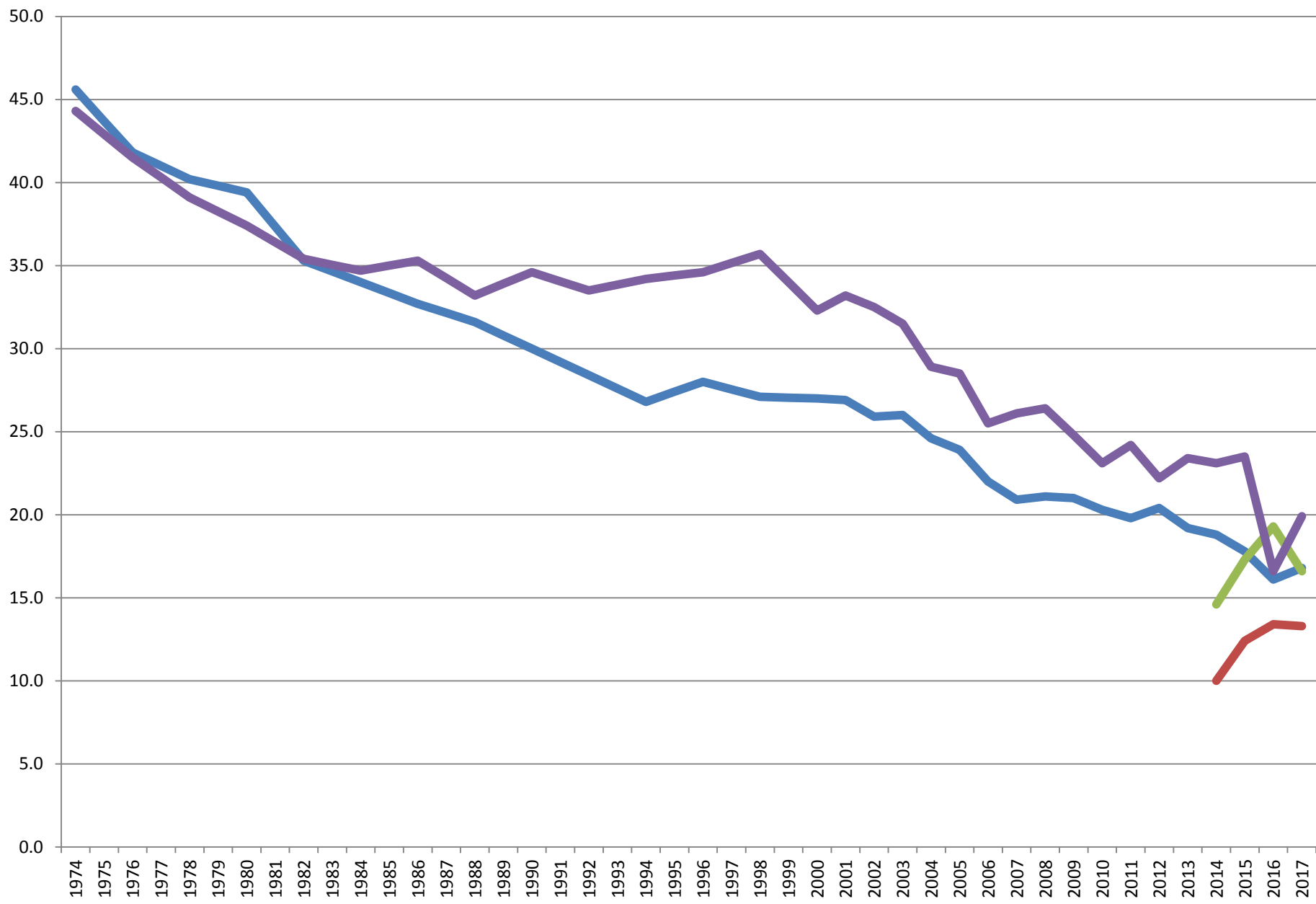
**ABSTRACT**

- 886 participants
- NRT vs E-cig
- 9.9% vs 18%
- 80% still using E-cig at 1 year

# Nicotine use by never smokers and long-term ex-smokers



N=63376 never and long-term ex-smokers from Nov 2013





# National Surveys

- ASH Survey 2018 shows:
  - There are 3.2 million vapers in Great Britain
  - 2/3 of current smokers have tried an e-cigarette
- E-cigarettes are:
  - Cheap
  - Widely available
  - Patient initiated



**The Cons**

Vaping

## E-cigarettes are almost certainly better than smoking

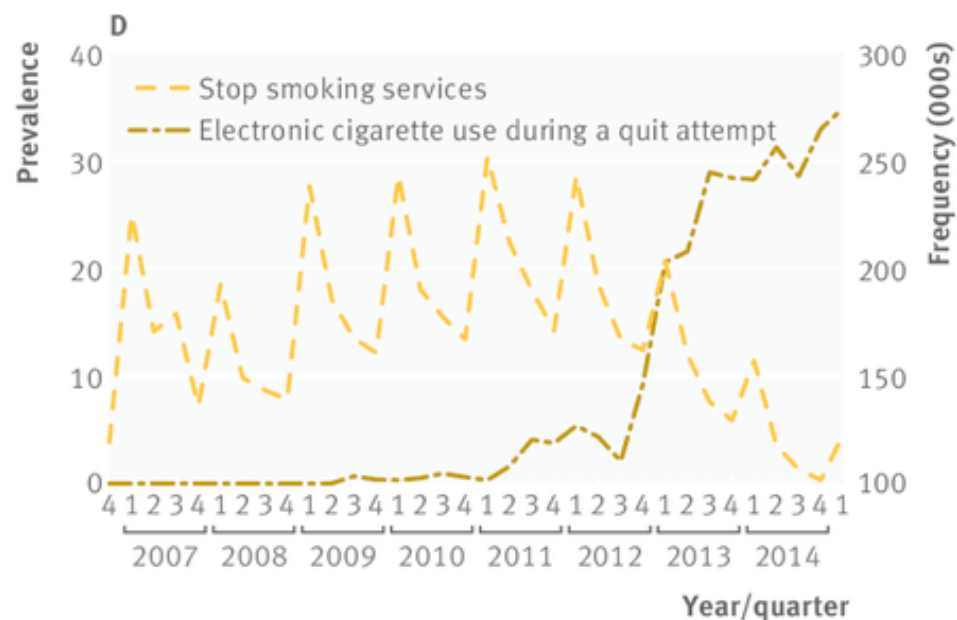
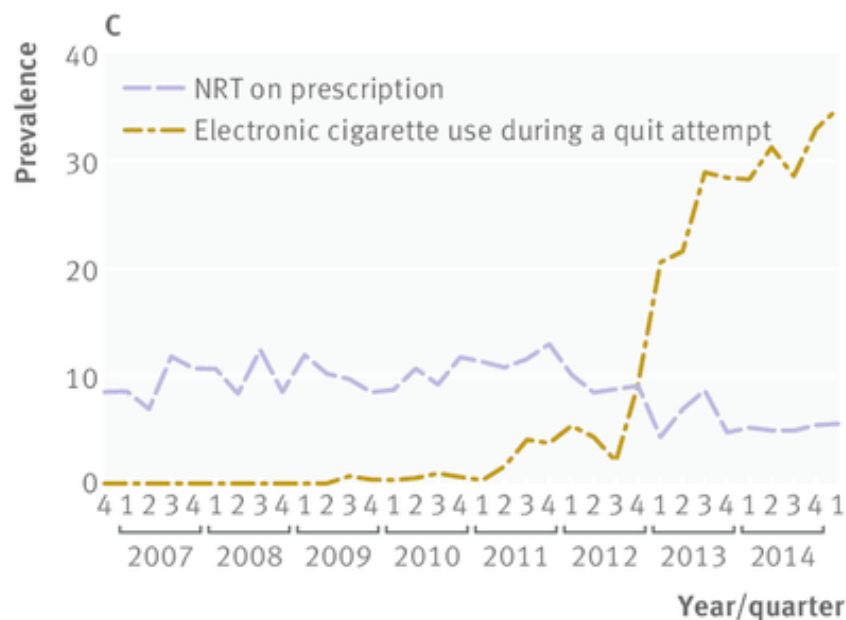
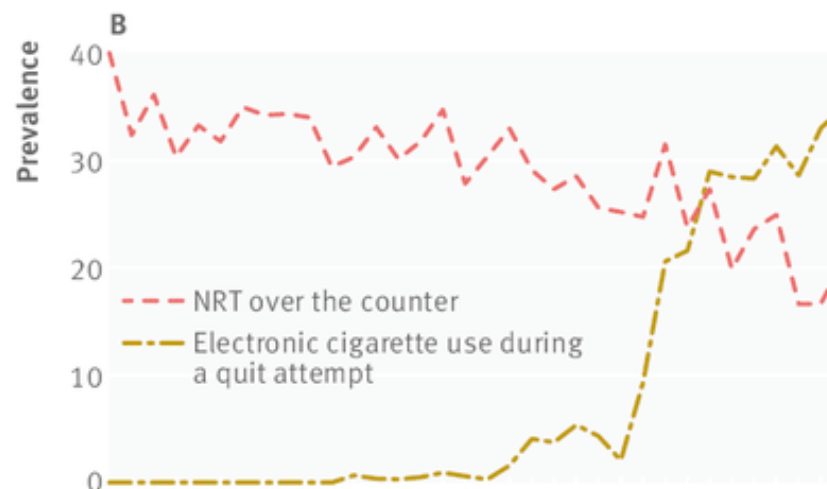
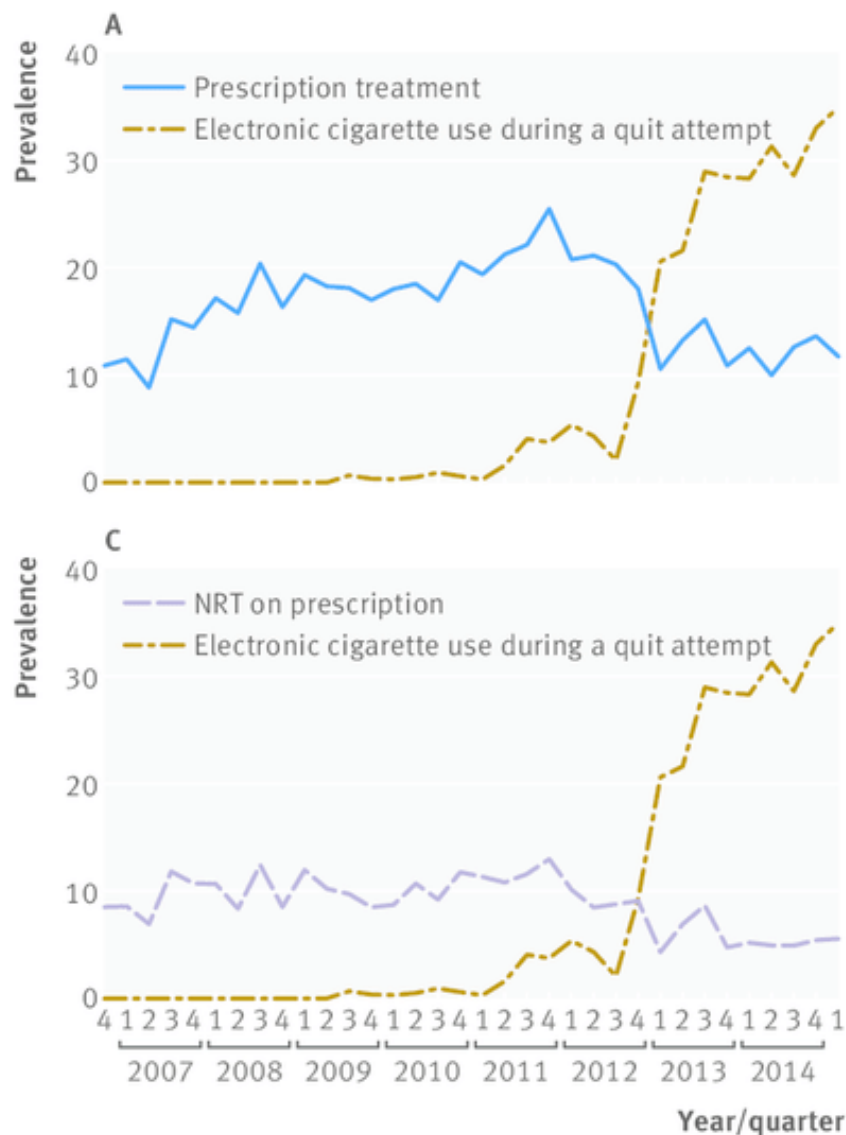
*But “better than smoking” is not necessarily the same as “good for you”*



Cigarettes kill 1/2 of those who use them  
It is not difficult to be less harmful than cigarettes

- Being less harmful is not the same as being safe
- Are e-cigarettes safe?
  - Non-evidence base replacing smoking cessation
  - Variability and unregulated nature of devices
  - Differences in policy around the world
  - Adolescent use
  - Fires
  - Poisonings

# E-cigarette use during a Quit attempt





# Regulation

- Technically regulated
- Only one e-cigarette is approved by MHRA...
- ...and is not in production
- Only available to sell to over 18s...
- ...but available to buy in street markets, petrol stations, pound shops, online.
- Otherwise governed by EUTPD



# LOVE YOUR LUNGS



## SIMPLE REFRESHING SMOKE FREE

**SMOKE IN STYLE**  
With blu Electronic Cigarettes

Freedom never goes out of fashion. Control when and where you want to smoke with blu electronic cigarettes. blu provides no tobacco smoke and no ash, only vapor, making it the ultimate necessary and the smoother alternative to regular cigarettes. Step out in style with blu.

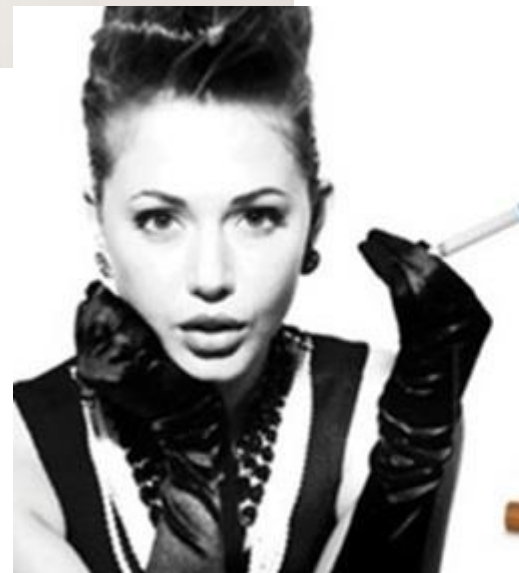
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Produced by the World's First Smart Pack company

**blucigs.com**

T18-D required. The design shown is merely illustrative and does not have been evaluated by the Food and Drug Administration. Use only the products and accessories in your city or state of residence.



**VIP**  
Taste the UK's No.1 E-cig.





Public Health  
England

Based on current knowledge, stating that vaping is at least 95% less harmful than smoking remains a good way to communicate the large difference in relative risk unambiguously so that more smokers are encouraged to make the switch from smoking to vaping.



British  
Thoracic  
Society

BTS acknowledges the report from Public Health England in 2015 and the recommendation that smokers who have tried other methods of quitting without success may want to consider e-cigarettes (ECs) to stop smoking.



Royal College  
of Physicians

E-cigarettes are likely to be beneficial to UK public health. Smokers can therefore be reassured and encouraged to use them, and the public can be reassured that e-cigarettes are much safer than smoking.



'the safety of e-cigarettes and their alleged superior efficacy in smoking cessation have not been scientifically demonstrated'



'despite the fact that more research is needed, there is enough evidence implying the immediate health risks in using them (e-cigarettes) brings'



'The FDA won't tolerate a whole generation of young people becoming addicted to nicotine as a tradeoff for enabling adults to have unfettered access to these same products.'



Public Health Association  
AUSTRALIA

'there is a serious potential threat to health arising from the deep inhalation of fine and ultra-fine particles and nicotine'



'There is not enough scientific evidence to support ECIGs as an aid to smoking cessation due to a lack of controlled trials...The long-term effects of ECIG use are unknown, and there is therefore no evidence that ECIGs are safer than tobacco in the long term. Based on current knowledge, negative health effects cannot be ruled out.'

## *Addicted to Vaped Nicotine, Teenagers Have No Clear Path to Quitting*



Health » Food | Fitness | Wellness | Parenting | Live Longer

International Edition

# Teen vaping continues to rise while other drug use declines, survey finds



By [Jacqueline Howard](#), CNN

🕒 Updated 1424 GMT (2224 HKT) December 17, 2018

## Nearly four MILLION US teens vape cannabis, CDC report reveals

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FDA News Release

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*Sharp rise in e-cigarette use results in uptick in overall tobacco product use; prompts new, forceful steps by FDA to firmly confront and reverse youth epidemic*

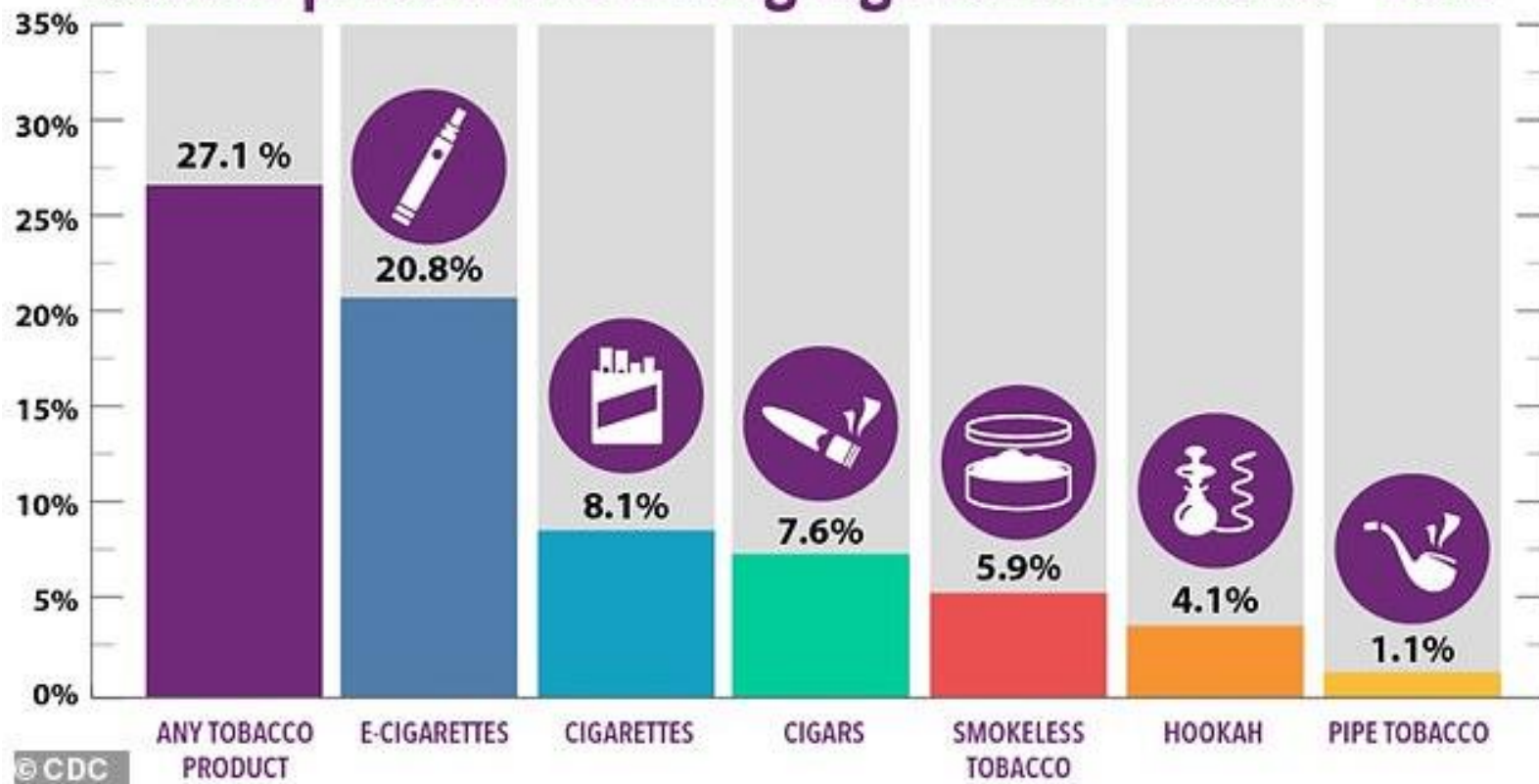




Won't somebody  
please think of  
the children?!

- Systematic review and meta-analysis showed significantly higher odds of smoking initiation (OR 3.50) and past 30 day cigarette use (OR 4.28) amongst adolescent/young adult e-cigarette users
- Gateway effect?
- Common liability?
- Adolescent e-cigarette users are at increased risk of cough, wheeze and asthma exacerbations

## Tobacco product use among high school students—2018



# Are long term vapers interested in vaping cessation support?

- 347 current vapers from France, Switzerland, Belgium and other EU countries
- 66% had no thoughts of stopping vaping
- 13% were concurrently smoking

No organisation is recording whether people stop vaping once they have started.



# Poisoning

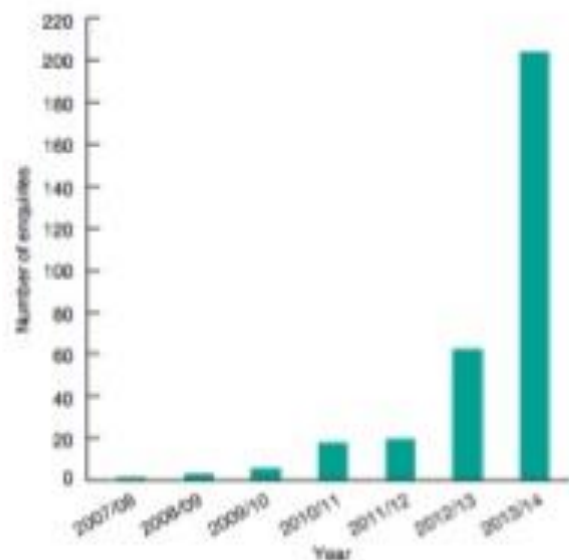


FIGURE 6.12 Number of enquiries about e-cigarettes to the NPIS from 2007/08 to 2013/14

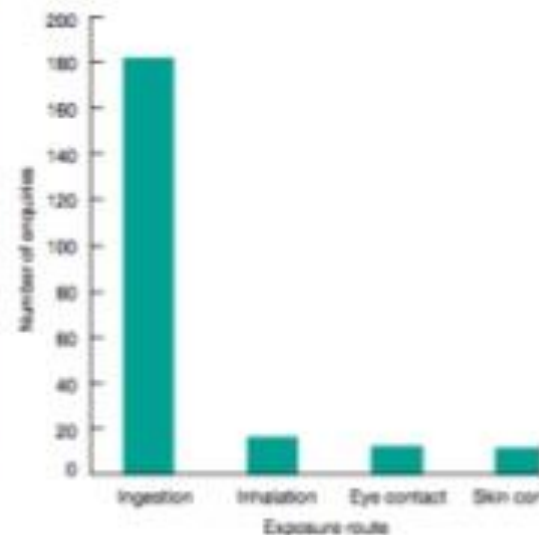


FIGURE 6.14 Route of exposure in enquiries about e-cigarettes to the NPIS

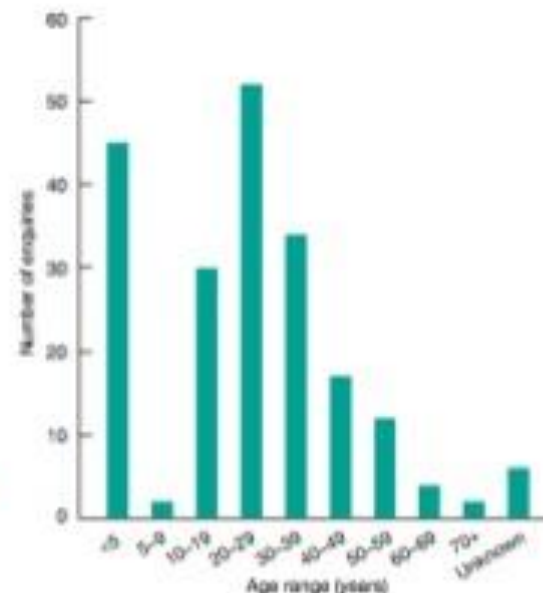


FIGURE 6.13 Age of patients in enquiries about e-cigarettes to the NPIS



Public Health  
England



National Poisons  
Information Service

# Fires







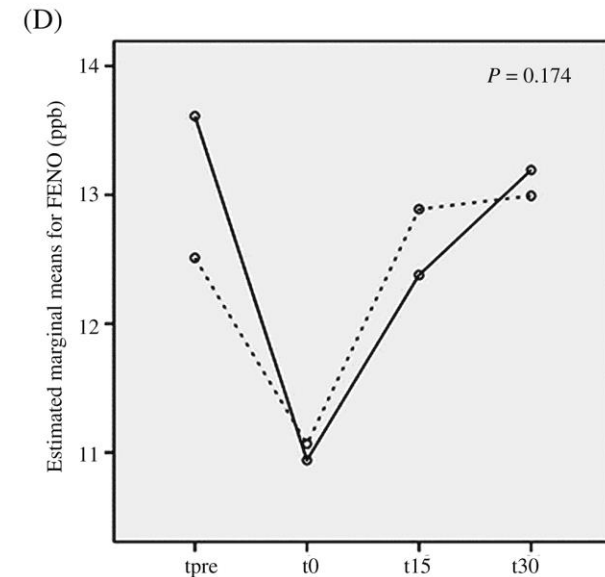
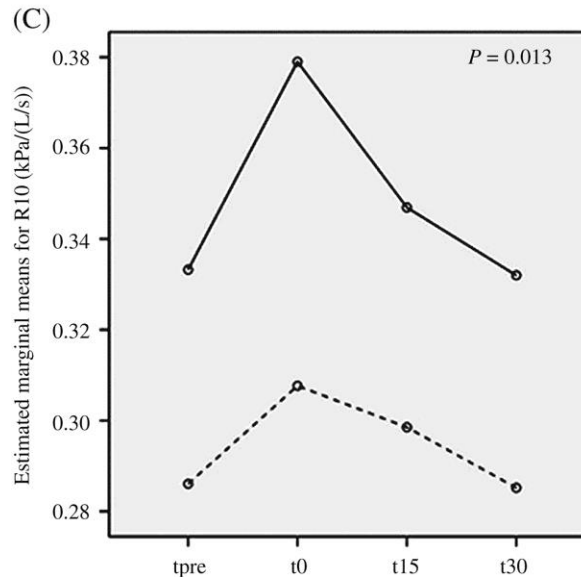
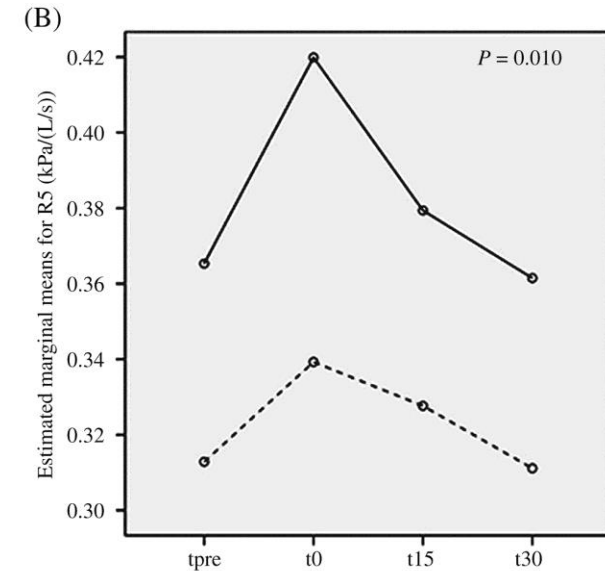
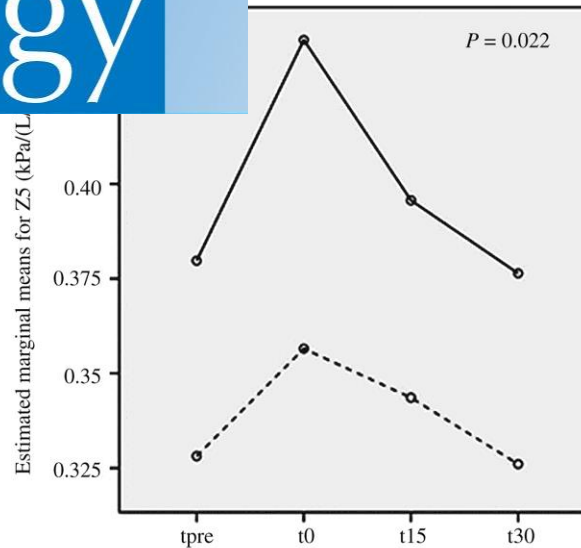
**What about asthma?**

# What do you say when asked about e-cigarettes?



There is evidence that e-cigarettes are less harmful than smoking conventional cigarettes. However, people with asthma tell us that any sort of smoke or substance in the air can trigger their asthma symptoms, including the vapours or smells from e-cigarettes.

- 54 dual users
- 27 with mild Asthma
- 27 healthy



Short-term respiratory effects of e-cigarettes in healthy individuals and smokers with asthma. Lappas AS et al. *Respirology*. 2018 Mar, 23(3): 291-297



# DRUG AND ALCOHOL Dependence

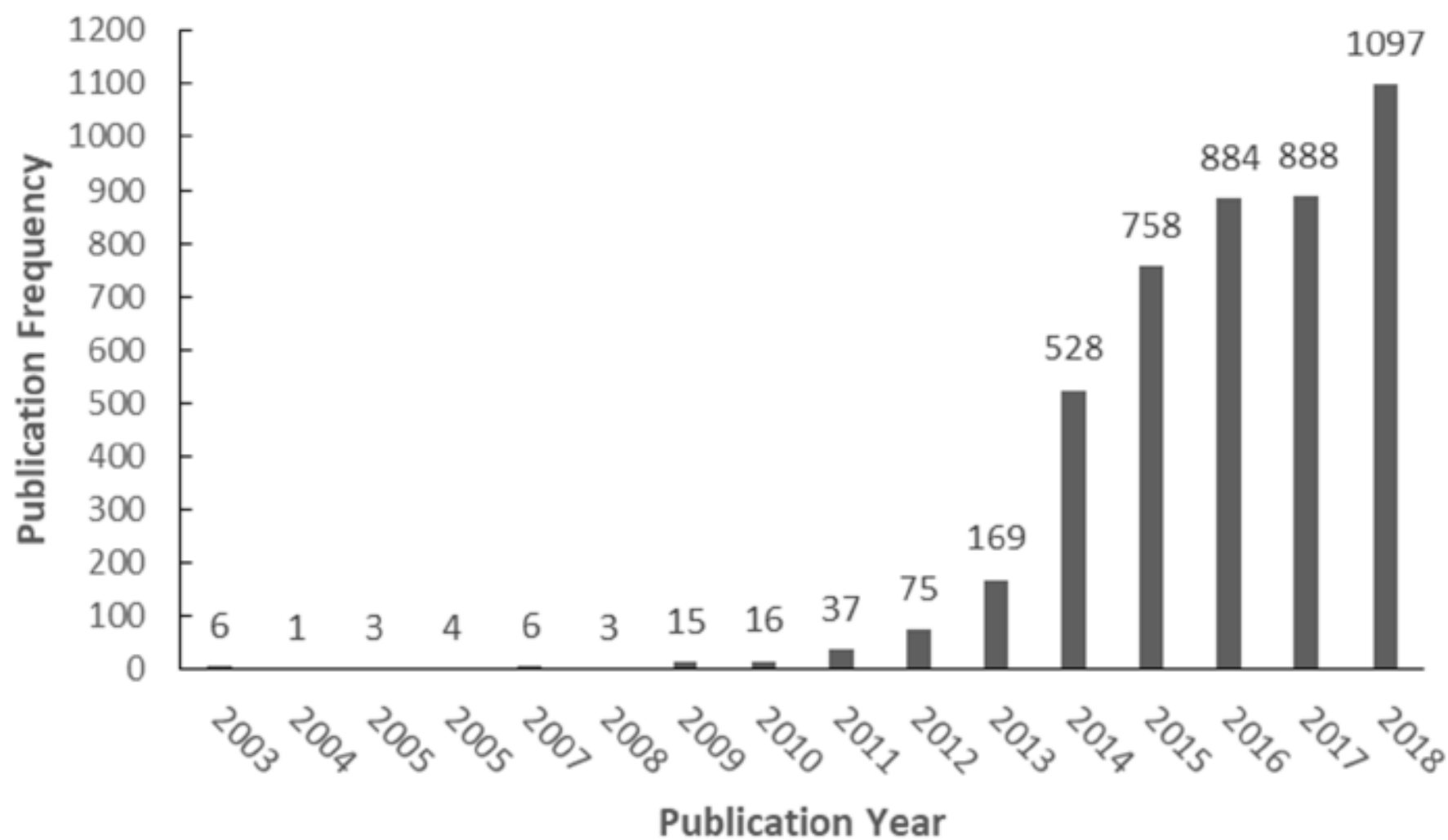
- Behavioural Risk Factor Surveillance Survey
- Significant association with asthma among e-cigarette users who were non-smokers (AOR 1.33,  $p < 0.05$ )

- Moderate evidence for increased cough and wheeze in adolescents who use e-cigarettes, and an increase in asthma exacerbations.

- Secondhand E-cigarette exposure was associated with higher odds of reporting an asthma attack in the past 12 months (OR 1.37)

# Who is doing the research?

- United States of America – 1666 publications (51.9%)
- United Kingdom – 443 publications (13.8%)
- Australia – 156 publications (4.9%)
- The most prolific institutions with e-cigarette publications from 2003-2018 included 9 US institutions and 1 UK institution





# What are doctors' opinions and practices regarding e-cigarettes?

- Online survey with over 400 responses so far
- Shows a great disparity between beliefs of doctors from different specialty, but most agree that patients should be encouraged to quit both
- Demand for more training and information
- Please complete it! – Will be in BTS e-newsletter this week

# Conclusions

- Smoking is bad, dangerous and expensive to the NHS
- E-cigarettes are probably safer, but not harmless
- E-cigarettes can help people stop smoking, but will they ever stop vaping?
- Are we introducing a new generation to nicotine addiction?
- There is a lot more to be done before we will know for sure
- We have a responsibility to advise individual patients and promote smoking cessation, so keep up to date!

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